

Notice of Allowability

Application No.

10/808,756

Applicant(s)

HONG ET AL.

Examiner

Anthony T. Dougherty

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Papers filed 3/25/04.
2. ☒ The allowed claim(s) is/are 1-14.
3. ☒ The drawings filed on 25 March 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-14 allowed.
2. The following is an examiner's statement of reasons for allowance:

The primary reason for the allowance of claims 1-7 is the inclusion of the method steps being measuring the speed of a moving body using an accelerometer by using ranges of time for obtaining a movement average for a movement measurement value at a point of time from a plurality of movement measurement values measured by the accelerometer and a plurality of weight values for each of the measurement values included in the range, regulating the range and the weight values based on a predetermined standard when the moving body has not been determined to be in a stopped condition, detecting an irregular constant of the accelerometer for measuring the gravitational acceleration component based on information in the time ranges and the weight values, calculating an actual acceleration value by subtracting the irregular constant and the gravitational acceleration component from the acceleration measurement at a moment in time and calculating the speed of the moving body based on the actual acceleration value. It is these steps found in each of the claims, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

The primary reason for the allowance of claims 8-14 is the inclusion of the limitations of an apparatus for measuring the speed of a moving body using an accelerometer with a gravitational acceleration-compensating unit for calculating a movement average of an acceleration at a point of time when an actual acceleration is to be obtained using stored

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acceleration measurements wherein a weight value is assigned to each of the stored measurements included in a time range from the point of time when the actual acceleration is to be obtained, the weight value used to calculate the movement average, the earth's gravitational acceleration component being compensated for the acceleration measurement at the pertinent point of time based on the movement average, and a speed-calculating unit for calculating the speed of the moving body using the information in the actual acceleration after compensation of the earth's gravitational acceleration. It is these limitations found in each of the claims, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5,265,472 to Pfeifle et al. because it teaches using a ranges of time to collect accelerometer measurements and a sliding average of these measurements to compensate for the gravitational acceleration component. However, Pfeifle et al. fails to disclose weighting the measurements used in the average, regulating the range and the weight values based on a predetermined standard when the moving body has not been determined to be in a stopped

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condition, detecting an irregular constant of the accelerometer for measuring the gravitational acceleration component based on information in the time ranges and the weight values, calculating an actual acceleration value by subtracting the irregular constant and the gravitational acceleration component from the acceleration measurement at a moment in time or calculating the speed of the moving body based on the actual acceleration value.

U.S. Patent No. 4,531,300 to Heidel et al. because it teaches an electronic inclination gauge with acceleration compensation using gravitational references.

U.S. Patent No. 5,774,832 to Vanderwerf because it teaches a commercial aircraft navigation compensation system for gravitational acceleration.

U.S. Patent No. 5,828,987 to Tano et al. because it teaches measuring the speed of a moving object using GPS and various mathematical manipulations of gravitational acceleration measurements.

U.S. Patent No. 5,925,087 to Ohnishi et al. because it teaches eliminating noise in a slope measurement for a vehicle using a measurement of gravitational acceleration.

U.S. Patent No. 5,986,583 to Nakano et al. because it teaches determining the distance a vehicle travels using a mean value of acceleration and integration to eliminate the gravitational acceleration component.

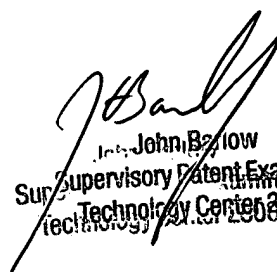
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony T. Dougherty whose telephone number is (571) 272-2273. The examiner can normally be reached on Monday through Friday from 8 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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John E. Barlow
Supervisory Patent Examiner
Technology Center 2800